REPORT

ON THE

NAGPUR MODEL FARM

IN THE

CENTRAL PROVINCES,

FOR

THE YEAR 1882-83.

NAGPUR:

PRINTED AT THE CHIEF COMMISSIONER'S OFFICE PRESS.

278

1883.

No. 3528A / 199

FROM

A. H. L. FRASER, ESQUIRE, C. S.,

OFFG. SECRETARY TO THE CHIEF COMMISSIONER,

Central Provinces.

To

THE DIRECTOR OF AGRICULTURE,

Central Provinces.

Dated Nagpur, the 13th August 1883.

SIR,

I am directed to acknowledge receipt of your letter No. 275, dated 21st ultimo, submitting the Report on the Nagpur Model Farm for the year ending 31st March last, drawn up by Lieutenant-Colonel Lugard, Deputy Commissioner, Nagpur.

2. It is unnecessary for the Chief Commissioner to review that report in detail. You have dealt with it fully and clearly; and your remarks have the general concurrence of the Chief Commissioner. The two subjects that call for special attention are the change of system and site indicated in your eighth paragraph, and the attempt to introduce Kachi cultivators from Cawnpur treated in your ninth and tenth paragraphs.

3. The decision to contract the operations of the Model Farm within a more convenient area, and to conduct them on the apparently more suitable site now chosen, was come to before Mr. Jones took charge of the administration of the Province. He has no doubt of the expediency of that decision. He also feels great interest in the experiment which is being made with the Kachis, of which he is glad to find that you write very hopefully. The establishment of the Agricultural Department in this Province has introduced a change of management which may be confidently expected to result in increased efficiency.

4. I am to say that the Chief Commissioner acknowledges the excellent work done by Colonel Lugard in connection with the Farm, and to request that you will convey to that officer an expression of his appreciation of his services.

I have the honor to be,

Sir,

Your most obedient Servant,

A. H. L. FRASER,

Offg. Secretary.

47·89

No. 275.

FROM

J. B. FULLER, ESQUIRE, C. S.,

OFFG. DIRECTOR OF AGRICULTURE,

Central Provinces.

To

THE SECRETARY TO CHIEF COMMISSIONER,

Central Provinces.

Dated Nagpur, the 21st July 1883.

SIR,

I have the honour to submit in original the Report on the Nagpur Model Farm for the year ending March 31st 1883, which has been drawn up by Colonel H. I. Lugard, Deputy Commissioner of Nagpur. Colonel Lugard held charge of the Farm during the year in addition to his own duties, assisted by a Native subordinate.

2. The expenditure on the Farm during the year amounted to Rs 7,987-2-0. On the other hand Rs. 2,030-11-9 were realized from sale of produce and paid into the Government Treasury, and there is unsold produce in hand which is worth some Rs. 1,750 more. Out of the 2,030-11-9 paid into the Treasury Rs. 400 were on account of the year preceding. Deducting this, the total value of the produce raised, sold and unsold, stands at Rs. 3,380-11-9. The net cost of the Farm to Government is therefore reduced to Rs. 4,606-6-3, more than half of which is accounted for by salaries and by the expenditure in settling certain Kachi cultivators who were imported from the Cawnpore district. The net cost is less than that of the previous year by Rs. 2,115-5-7, the reduction being due to the savings effected by placing the Farm under Colonel Lugard's unpaid management instead of retaining a European Superintendent.

3. Colonel Lugard has given a very full description of the character of the season, which, but for a fortunate fall of rain in November, would have been again very unfavourable. The monsoon was characterised by violent storms, followed by long breaks, which brought the disadvantages of the Farm site into especial prominence. Thus Colonel Lugard writes (para 9) :—"It is on such occasions that the very poor and undulating nature of the farm lands are especially noticeable : in some of the thur fields the moorrum crops right up to the surface, and 10 days of hot sun will scorch up any plant : and again some of the cotton fields are on such undulating land that the water drains rapidly away from the ridges, and the young and tender plants cannot stand the total withdrawal of moisture from their roots." And again [para. 12] "This violent storm showed forth all the bad qualities of the farm site. Owing to the undulating nature of the land bunds were washed away, the whole place was flooded."

The rain-fall of the year was 47·89 inches, distributed as follows :—

June, July	33·02	inches.
August	1·35	,,
September 1 to 15th	8·28	,,
September 16 to November 15th ...	1·66	,,
November 16 to ,, 30th ...	3·18	,,
December, January, February and March	0·40	,,
	47·89	

Heavy rain in June and July was followed by a month's break in August. There was again heavy rain in the beginning of September, followed by a break of two months. This was not only exceedingly harmful to the kharif millets, but rendered the rabi prospects very precarious, since the ground was too dry for successful sowing, and linseed and gram sown in October germinated very unevenly. Fortunately a heavy fall of rain occurred in the beginning of November which partially saved the kharif crops and enabled wheat sowings to be carried out under exceptionally favorable conditions. So far as the farm was concerned the kharif was an almost entire failure, as were also the early sown rabi crops,—gram and linseed. The wheat crop, on the other hand, was the best that has ever been gathered, and is the redeeming feature in the year's operations.

4. The area under kharif crops was 116 acres, 3 roods, 8 poles, distributed as below:—

	Acres.	Roods.	Poles.
Cotton, country ...	22	3	8
,, exotic ...	8	2	0
Juar ...	36	0	0
Juar—Thur ...	19	0	0
Thur ...	15	0	0
Til ...	7	0	0
Rice ...	6	0	0
Sugarcane ...	2	2	0
	116	3	8

With the exception of the exotic variety of cotton none of these crops bore an experimental character. The *exotic cottons* which were tried were the Broach and New Orleans (American) varieties. Both failed signally, but under conditions which render their failure of little instruction The remaining portion of the kharif area (153 acres, 1 rood) was cultivated in a manner which differed no whit from that followed by the ordinary cultivator, except that the land was ploughed with the English instead of with the country plough. Colonel Lugard is of opinion that the Farm crops were superior to those of cultivators in the vicinity, and that this superiority is due to the deeper tillage which the Farm lands received.

The out-turns were exceedingly small, but were considerably better than those of the previous year. The average out-turn per acre of *cotton* grown alone was 64 lbs. and when grown with Juari 33 lbs. *Juari* yielded an average of only 220 lbs, while the maximum out-turn gathered from any field was only 481 lbs. The average out-turn of *thur* was 145 lbs., the maximum being 170 lbs.; while *til* yielded an average of only 88 lbs., and a maximum of 210 lbs. *Rice* succeeded far better than in the preceding year, and gave an average out-turn of 604, with a maximum of 778 lbs.

5. These statistics would possess very great interest could we feel assured that they were really representative. But under the peculiar conditions of the Farm site it would be rash to assume this. It is remarkable, for instance, that New Orleans cotton failed completely on the Farm whilst a less hardy exotic (the khaki coloured variety) gave an out-turn of 120 lbs. per acre on some land lying immediately outside the Central Jail, not a quarter of a mile distant.

6. The area under rabi crops was 100 acres and 3 roods, distributed as below:—

	Acres.	Roods.	Poles.
Wheat, ordinary ...	54	0	0
,, imported varieties ...	5	0	0
Gram ...	19	2	0
Linseed ...	20	1	0
Vegetables ...	2	0	0
	100	3	0

The out-turn of *gram* and *linseed* was poor, averaging 267 and 141 lbs. respectively, with a maximum of 508 and 285 lbs. But this is very far superior to the out-turn of 1881-82, when the maximum out-turn of gram fell short of the present average, and the average out-turn only amounted to 121 lbs. Both gram and linseed were sown in October, and had suffered greatly from drought before the November rain occurred. Wheat was sown later, and the benefit it received was proportionately great. The yield of *wheat* was in some cases extraordinarily large. The heaviest out-turn was gathered from a field which had been manured in 1879, and regularly cropped since. The yield was at the rate of 1,288 lbs. (or 21½ bushels) to the acre. In another field which had been manured during the year, a plot measuring ⅛ acre was selected as being of particular excellence, and yielded at the rate of 1,840 lbs. (=30¾ bushels). None of these fields were irrigated. The general average out-turn for wheat was 635 lbs. The highest average of the preceding eight years was 533 lbs.

7. The imported varieties of wheat which were experimented with were those known in the Nerbudda Valley as *pissi* and *julalia*. Both yielded well, but the *julalia* gave by far the heaviest out-turn of the two—1,605 lbs against 1,041 lbs. The grain is reported, however, to have deteriorated in quality, and to have not been superior to that locally produced. In paragraph 44 Colonel Lugard describes an interesting experiment in double cropping. A portion of a field which had been heavily manured with poudrette was sown in the rains with juari. The juari was cut green for fodder and the whole field then sown with wheat. The double cropped plot yielded an out-turn of 1,370 lbs, which was considerably more than the average out-turn from the rest of the field. Colonel Lugard ascribes this to the action of the juari in keeping the manure in position and preventing it from being scoured away by the rain.

8. In the reports for the past eight years the unsuitability of the Farm site for experimental agriculture has been often strongly insisted upon, and this opinion is corrobrated by Colonel Lugard's experience. During the year under report it was accordingly determined to discontinue Government farming altogether on the Model Farm site, and to limit agricultural experiments in future to a smaller, but much more favorably situated tract of land lying immediately south of the "Maharaj Bagh." "Model" farming on a large scale will not be attempted in future, and all that will be aimed at is the careful conduct of experiments on a sufficiently large scale to render the results reliable. Experimental farming on this new site has already been started. Part of the area of the Model Farm has been disposed of by lease to cultivators. Part will be utilized as a sewage farm for Sitabaldi and the Civil station of Nagpur, and for this purpose a tract has been reserved of sufficient area to utilize the whole of the sewage and of the irrigation water available.

9. Very little agricultural use is at present made of the sewage of Nagpur, and the income which the Municipality derives from it is quite insignificant. The Kunbi cultivators round the city are strongly prejudiced against using it, and are quite ignorant of the manner in which it can be used to best advantage. It was therefore determined in June 1882 to import some cultivators of the Kachi caste from Cawnpore, and endeavour to proselytise the Kunbis through their example. Twelve of these men were accordingly brought down to Nagpur, and were at the outset entertained as paid labourers on a very liberal rate of salary They promised exceedingly badly, and were very idle and discontented. In September the three most obstructive of the number were sent summarily back to Cawnpore, and the rest were induced to accept an arrangement under which their salary was reduced from Rs. 7 to Rs. 4, and in return for this they were given four acres of land rent-free for nine months, with the right to use, free of charge, the manure stored in the Farm sewage pits. At the end of this period all salary was to cease, and the land was to be assessed to rent. The crops which they grew under these conditions were exceedingly good and gave them handsome profits. Their salary has now been discontinued, and they have accepted 6 acres of land on a five years lease at a progressive rent, which has been fixed at Rs. 5 per acre in the first, and Rs. 15 in the fifth year. This is exclusive of water rate, which is charged for separately according to the amount used. A portion

of the Sitabaldi sewage is stored in pits close to their fields, and they are allowed to use as much of it as they please free of charge, Government undertaking to maintain the supply. It is too early yet to speak with confidence of the future of the scheme, but I am glad to be able to report that their example appears to be having the desired effect on the Kunbi cultivators. The latter have from the first shown great jealousy of the Kachis, and within the last two months three Kunbis have come forward with applications for land on similar terms. Two of these applications have been accepted, and the men are in possession of their land. It has been expressly stipulated that they are to use the sewage with their own hands, and not to employ *Bhanji* labourers.

10 The result of their cultivation may be expected to yield some really trustworthy data as to the agricultural value of sewage, the best method of utilizing it, and as to the value of irrigation when used in conjunction with it There can be no doubt whatever that lack of irrigation is the principal obstacle to the proper utilization of city sewage in these Provinces, and it may be possible to demonstrate that the value of water when applied to a sewage farm is sufficiently high to render it profitable to incur a considerable outlay in bringing it on to the land.

11. In conclusion, I have to bring to the notice of the Chief Commissioner the service which Colonel Lugard has rendered in his management of the Farm. In previous years a considerable sum has always been spent either on the salary of a European Superintendent or in remunerating an officer for holding charge of the Farm in addition to his own duties. No such expense has been incurred during the year under report, although the results will, I think, compare very favourably with those obtained in any previous year. This is due to constant supervision on Colonel Lugard's part, supplemented by an interest in the work, to which his report by itself bears testimony. I have also to express my own acknowledgments to him for the assistance which he has ungrudgingly given me in effecting the final settlement of the Kachis and the transfer of the Farm to its new site.

I have the honor to be,

Sir,

Your most obedient Servant,

J. B. FULLER,

Offg. Director of Agriculture.

No. 2748.

From

LIEUT.-COLONEL H. I. LUGARD,

DEPUTY COMMISSIONER,

Nagpur.

To

THE DIRECTOR OF AGRICULTURE,

Central Provinces.

Dated Nagpur, the 9th June 1883.

SIR,

I have the honor to submit the annual Report of the Model Farm for the year ending 31st March 1883.

2. Although Mr. Mylne's services as Superintendent of the Farm were not dispensed with till the 12th July, he was virtually relieved of all work on the Farm, and Mr. P. Jacob was in charge as Superintendent throughout the year, and the satisfactory results attained are due in a great measure to his exertions.

3. The net cost of the Farm to Government in the year 1881-82 was Rs. 6,721-11-10. The net cost during the year under report was only Rs. 5,956-6-3, and there is unsold produce in hand of the value of Rs. 1,750, (see Statement III. appended). Deducting Rs. 400 from the receipts paid into the Treasury which represent the sale proceeds of produce remaining over from the preceding year's crop, but making an allowance for the Rs. 1,750 worth of produce still in hand, the net cost of the Farm to Government stands at Rs. 4,606-6-3.

4. Against this net cost must be set Rs. 1,346-12-5 on account of salaries, and Rs. 1,193-0-5, expenses of settling the Cawnpore Kachis.

5. For this net cost some results have been attained which were never attained before, some experience gained, and some public notice obtained which were never even attempted before. The object for which the Farm was created has been kept in sight, and steps have been taken towards its realization. These same results might have been attained at a much less cost, had the dimensions of the Farm not been so great, or the land so poor and unprofitable; and those two defects which are the cause of heavy expenditure have now been removed by you, by leasing out the Farm lands, and merely working an experimental farm of small area,

6. I will now proceed to remark in detail on the season and crops.

The season, on the whole, was not favourable for the kharif, but was very good for the rabi crop. The total rain-fall registered during the year was 47·89 inches, which was distributed as follows.

7. The monsoon proper broke on the 8th June, and continued without a break for 8 days, the gauge showing 8·52 inches. This fall was very favourable for the kharif crop. The bunds for rice fields which had been built were all consolidated. The drainage of all the fields was looked to, and the fallow in fields Nos. 34 and 37 was ploughed up; manure which had been collected in heaps was spread and ploughed in, and the whole establishment was busily occupied in taking advantage of this favourable fall, and getting everything in readiness for the sowings.

8. On the 17th, directly this first burst of rain ended, the sowing of thur and cotton was commenced, and completed under favourable circumstances by the 26th June; but some of the young plants of the 1st sowings were injured by these 10 days of strong sunshine, especially the thur in light soil, and the Broach cotton; and gaps were formed which had to be filled up.

9. It is on such occasions that the very poor and undulating nature of the farm lands are especially noticeable: in some of the thur fields, the *murum* crops right up to the surface, and 10 days of hot sun will scorch up any plant; and again some of the cotton fields are on such undulating land, that the water drains rapidly away from the ridges, and the young and tender plants cannot stand the total withdrawal of moisture from their roots.

10. The rain which began again in steady showers from the 28th June was very beneficial to the kharif crops, which at once made a decided start.

11. The month of July was unfavourable to the kharif. The 10 days of bright sunshine in the end of June caked the surface of the soil, which is more or less clayey, and the land for juari was got ready with great difficulty. Though the fields were more than once stirred with the "bakhar," yet the sub-soil remained warm. Field No. 39 was sown with juari, and the plants rapidly germinated, owing to the bottom heat, but for want of moist air and a cool surface, which are indispensable where there is bottom heat, the young plants succumbed.

12. The season was passing, and it looked as if the sowings would never be made, but on the night of the 9th July there came a heavy downpour of rain accompanied by violent wind, and though the storm only lasted 2 hours, yet 5·54 inches were gauged. This violent storm showed forth all the bad qualities of the farm site. Owing to the undulating nature of the land, bunds were washed away, the whole place was flooded, manure and soil were washed clean away, and the surface of the soil again battered down hard; it looked as if the elements were against us, and as a District officer I was able to judge of the trials and anxieties which the unfortunate agriculturists must suffer. The little river "Nag" rose like a giant, and its two branches combined and swept over the Maharaj Bagh, and clean over the bridge on the Anjni road. I felt desperate, and wished that the Director of Agriculture would take the farm off my hands for the season. Next day reports came pouring in from the district. Villages had been swept away, fields had been desolated, Behad, Hingna, Goomgaon and other villages had been wrecked, and I fully sympathised with the ryot in his distress.

13. On the night of the 10th July a similar storm came on, but the rain was not so heavy, and though the storm lasted for 15 hours, only 6·29 inches were gauged: still this, added to the storm of the 9th, did great damage,—the young plants of cotton and thur were nearly washed out of the ground, the tender leaves were battered and bruised and torn, and one could scarcely avoid thinking that the whole was a wreck and must be ploughed up again.

14. These storms continued at intervals, but with somewhat subdued violence, throughout the month, and the juari sowings were got through very late and with great difficulty; the ground got so saturated with wet, that the seed drill could not work properly, and the germination of the seed was very poor. Still the juari on the farm, compared with that of the surrounding cultivators, was superior, and I attribute this to the deep ploughing, which enabled the soil to withstand the variations of drought and wet. The juari crops around Nagpur looked withered and wretched, and where planted on black soil, blighted and worm eaten. The healthy condition of our soil which allowed of free access of air and light, and the thinness of the sowing, kept the plants in a healthy condition, so that though not luxuriant, the plants were not withered nor worm eaten. I took every opportunity of pointing this out to such malguzars as I took to see the farm.

15. The month of August was remarkably dry and warm and cloudy, and following on such heavy rain, it did damage, bringing caterpillars on the cotton and juari plants. The New Orleans cotton suffered from the continued drought, and was only saved from destruction by irrigation. The juari in fields Nos. 3, 4 and 37 was evidently withering away, and all kinds of kharif crops looked wretched and desolate. It was no consolation to me that my neighbour's crops were worse than mine; in fact it was a fresh anxiety, for if my fields, which I visited constantly, were in this woe-begone state, what must be the condition of the careless ryot, who simply scratches his seed into the ground and trusts to the sun and the rain to do the rest. I called for information from Tahsildars, and I found that in stony country like Katol, crops were withering up; but in black soils they were still holding their own. I felt inclined to cut the juari while it was still green and use it as fodder. I have never known the month of August so dry.

In 1882	there were	1·35	inches.
„ 1881	„	12·15	„
„ 1880	„	4·21	„
„ 1879	„	13·20	„
„ 1878	„	17 86	„

The weekly reports for August show that rain was urgently wanted, and towards the end of the month prices rose suddenly, and prospects looked gloomy.

16. September opened with rain, and the kharif crops were saved. The rain was steady and most beneficial, and not only were the kharif crops brought on most wonderfully, but we were able to prepare the land for rabi sowings; Tili was sown in fields Nos. 12, 16 and 17, and germinated well. "Kooch" grass was eradicated from the fields, and everything was in readiness for the rabi sowings. Rain ceased on the 24th September, and there was not a drop of rain till the 3rd November. This again was most unusual. The "Hathi," or final burst of the monsoon, had not come.

17. Just at a time when the kharif crops are coming to maturity, to have a break extending over 41 days is enough to drive any agriculturist wild, and was too much for the feelings of the unhappy shallow rooted crops. Here again, our deep ploughing told in favour of our crops, and our juari was better than that of our neighbours'. Cotton and thur being deeper rooted stood the drought better, and had it not been for the caterpillars, these crops would have been good.

18. Linseed and gram were sown in October under great disadvantages. The weather did not affect the gram so much as the linseed, which was withering daily, especially in fieldr Nos. 2 and 10, where it completely perished, while in other fields nearly 50 per cent were lost.

19. Had it not been for the rain in November our crops, both kharif and rabi, would have been complete failures. We had 4·28 inches of rain in November, a most unusual occurrence, and it had a most wonderful effect on the ripening kharif and on the young rabi crops, and enabled us to take up more land and to resow those fields where the linseed had perished from drought. I have no hesitation in saying that if we had not had this rain, not only would the juari have yielded scarcely anything, but the young rabi crops must have perished. This rain made them superior to the average.

20. The months of December, January, February and March were all favourable to the development of the rabi crop. Slight rain fell in the latter half of January and the early part of March; and for the rest we had clear cold weather. The clouds in January brought caterpillars into the Tili; but with this exception the weather could not have been more favourable than it was, and the crop answered to the weather and was first-rate.

21. The table of rain-fall is shown below in detail:—

		Inches.	
From 1st to 15th June	... ...	5·97	
„ 16th to 30th „	... ...	2·55	—8·52
„ 1st to 15th July	... ...	17·94	
„ 16th to 31st „	... ...	6·56	—24·50
„ 1st to 15th August	... ...	0·23	
„ 16th to 31st „	... ...	1·12	—1·35
„ 1st to 15th September	... ...	8·28	
„ 16th to 30th „	... ...	0 56	—8·84
„ 1st to 15th October	... ...	...	...
„ 16th to 31st „	... ...	...	...
„ 1st to 15th November	... ...	1·10	
„ 16th to 30th „	... ...	3·18	—4·28
„ 1st to 15th December	... ...	...	
„ 16 to 31st „	... ...	...	...
„ 1st to 15th January	... ...	...	
„ 16th to 31st „	... ...	0·32	—0·32
„ 1st to 15th February	... ...	...	...
„ 16th to 28th „	... ...	...	...
„ 1st to 15th March	... ...	0·08	
„ 16th to 31st „	... ...	...	—0·08
	Total rain-fall ...		47·89

22. I have written at some length on the subject of the rain-fall, because it is so important a factor in Indian agriculture. The success of the crops is directly proportional to the seasonable fall of the rain, and without it, is famine. I will now turn to the other important factor in our farm, viz. manure.

23. In the system of supply of manure to the farm no general change was introduced during the year. At your request the Cawnpore trenching system was tried on a small scale, but with your concurrence it was given up, and the pitting system reverted to, because although extra expense of excavating and carting to the fields is avoided, and the disagreeable smell complained of by the public is not raised, yet it was found that the soil was not suitable for the storage of the manure in this way. The black cotton soil breaks into deep and wide fissures or cracks in every direction, and in these fissures all the substance and essence of the poudrette disappears. The rains flooding over the fields wash the manure out of the shallow trenches, so that economy of disposal is purchased at enormous waste of valuable manure, and moreover the 'muck' thus treated is not conveniently removable for other purposes if required. I therefore understand that you thoroughly agree with me that the system is not suited to the Nagpur soil. The supply being comparatively limited, economy of manure is of much more importance than economy of labour, and therefore on the farm the pitting system was reverted to, with this difference, that where there were

formerly only one set of pits, there are now 3 sets to economize distribution of the manure to the fields; a pucka road and a bridge have also been constructed to give free access to the 'muck' carts, which last year were cut off during the rains, owing to the want of a road to the sewage pits. The pitting system has thus been elaborated and perfected during the year under report.

24. During the year under report about 325 tons of this pitted manure has been used on the farm, and distributed as follows at 10 tons per acre—

Acres.	Roods.		
4	0	...	for Cotton.
10	0	...	for Wheat.
2	0	...	for Rice.
2	2	...	for Sugar-cane.
4	0	...	for Vegetables.
3	0	...	for Fodder crops.
25	2		

and 100 tons were used by the Kachi cultivators from Cawnpore.

25. One of the main objects with which these men were introduced, was to show the local cultivators what can be done with poudrette as a garden manure, and to try and stifle the prejudices of the people against it. That they have succeeded in making a good thing of it for themselves is undoubted, and the local men only want to get the same liberal terms to handle the 'muck' just as freely as the Kachis themselves; but I never in all my life saw such a set of unbelievers,—they put the success of the Kachis down to their being housed free and getting subsistence &c., and want the same, as if that had anything to do with the raising of crops.

26. It is just the same with the Municipal Committee. I try to induce them to introduce the Poona system, and sell their manure as *dry* poudrette, and if any one would *guarantee* them a clear profit of Rs. 30,000 *per* annum, they would go for it at once! But they say the soil of Nagpur is different, there is no canal, how do you know it will answer and so on; and as my influence is only *from without*, I despair of doing anything. It is too bad that [illegible], with a population of 98,000, not a rupee should be made by the sale of poudrette and only about Rs. 300 by the sale of rubbish.

27. I will now proceed to comment on the various crops grown, and first on the Commercial farm. As you are aware, our area was so large that experiments could only be conducted on a portion of the Farm; and on the remainder, crops had to be grown as a commercial speculation.

Cotton.

28. The area under cotton was 28 acres as follows:—

		A.	R.	P.
Field No. 1	...	4	0	0
,, 7	...	7	3	8
,, 8	...	5	0	0
,, 12	...	1	0	0
,, 33	...	5	0	0
,, 5	...	5	0	0
		27	3	8

The whole of field No. 1, and portions of Nos. 7 and 33 had been manured with poudrette in previous years, and 2 acres of No. 33 were freshly manured during the year and ploughed in. The method of cultivation was as usual. The sowings began on the 17th, and were completed by the 26th June, and the first germination was very successful. The subsequent break of 10 days with strong sunshine was injurious to the crop, and many of the tender young plants died. The violent storms of the 9th and 10th July did great damage,—whole fields were flooded, and the undulating character of some of the fields caused the soil to be washed away from the roots of the young plants, and others to be buried beneath the silt and soil, and the subsequent action of the hot sun was very injurious and caused great gaps in the lines of plants. Measures were at once taken to plant fresh seed in these gaps; but the continued wet weather retarded their growth, and the first sown cotton plants threw their shade on the other. The practice of sowing juari 4 feet apart among the cotton was introduced in 1879, but I think this plan is injurious to the cotton,—the juari thinly sown is very luxuriant and succulent, and gives extraordinary stalk and cobs, and I believe takes away the nourishment from the cotton. In September I noticed that the cotton was not progressing well, and was running up into long plants and not branching freely, so I had the juari thinned, with marked advantage to the cotton.

29. The long breaks in August and October were injurious to the cotton and brought caterpillars; and the November rain, though very good for other crops, rather discoloured the cotton. The following is the out-turn of these fields.

Field No. 5 was entrusted to the cultivation of the Kachis from Cawnpore. A portion of it was sown broadcast, and this was entirely washed away in the storm of the 9th July; the remainder of the field was sown with a drill, and the seed germinated freely, but succumbed to the drought in August, so that the produce was *nil*, and as it was afterwards selected for an experiment in trenching, no other crop was planted in it.

Field No. 33 was given up to the Cawnpore Kachis for sugar-cane cultivation before the cotton crop was harvested and the plants were ploughed in.

Field No. 12 has only a light soil, and the drought in August did much damage to it.

Field No. 6 gave a tolerably fair out-turn.

The juari sown with the cotton was very superior, and yielded 170 lbs. of well formed juari seed per acre.

Thur.

30. The following fields were sown with thur:—

		A.	R.	P.
No. 11	... ...	5	0	0
„ 12	... ...	9	0	0
„ 15	... ...	5	0	0
„ 31	... ...	6	0	0
„ 22	... ...	6	0	0
„ 44	... ...	3	0	0
		34	0	0

The cultivation was ordinary. None of the fields were manured. Sowings commenced on the 17th, and were completed by the 26th June, and the germination of the seed was very successful. The young seedlings suffered a good deal from the violent storms of the 9th and 10th July, and again from the drought in August. They made a fresh start in September, but were thrown back by the continued drought in October, and the cloudy weather also brought caterpillars just at the time when the plants were in flower, and had it not been for the rain in the early part of November, the out-turn would have been *nil*. As it was, the out-turn was 11 khundies. Nos. 12, 31, 22 and 43 being very poor light soil, yielded scarcely anything; but Nos. 11 and 15 yielded a fair crop.

Juari.

31. The total area planted with juari was 36 acres, as follows:—

		A.	R.	P.
No. 3	... ...	5	0	0
„ 4	... ...	8	0	0
„ 39	... ...	8	0	0
„ 41	... ...	8	0	0
„ 37	... ...	7	0	0
		36	0	0

Nos. 3, 4 and 37 were manured with poudrette in previous years, and Nos. 39 and 41 had no manure. The system of cultivation was ordinary. Nos. 37, 41, and a portion of No. 39, were sown in the latter part of June, and sowings were then delayed by the excessive rain of July, so that Nos. 3 and 4 were not sown till the beginning of August. The month of August was so dry that the early sown juari was almost killed, and had it not been for the September rain it must have all perished, but in September the crop made a good start, and by the end of September the juari sown in June and that sown in August were just the same height. The dry weather in October again nearly killed them off, and it was only the welcome rain of early November that saved the crop from being an utter failure. As it was, the out-turn was very poor—the total out-turn was 30 khundies 13 kooros.

Till.

32. The following are the fields planted out with Tili, viz:—

		A.	R.	P.
No. 16	... ...	5	0	0
„ 17	... ...	2	0	0
„ 12	... ...	1	0	0
		8	0	0

None of these fields ever had any manure.

The system of cultivation was as usual. Sowings were carried out in September under favourable auspices, and the seed germinated freely; but the drought in October was too much for the young plants, and the out-turn was therefore very poor.

Rice

33. The following are the fields cultivated with rice:—

			A.	R.	P.
No. 6	...	...	2	0	0
„ 9	...	...	3	0	0
„ 8	...	...	1	0	0
			6	0	0

An acre in No. 9 and one in No. 8 was manured with poudrette for a seed-bed, the rest had no manure of any kind. These fields had been reclaimed with great labour from the fallow before the rains commenced. They were levelled, and the bunds consolidated with the first fall of rain and green weeds thrown in to rot. In the meantime sowings had taken place in the seed-beds prepared for the purpose, and the seed germinated well. The young plants were transplanted into the "bundies" largely in August. They got a check, however, from the drought. Those in field No. 9 were irrigated from the channel; but No. 6 was far from the channel, and its irrigation was not profitable; No. 8, though irrigated, was planted out late and did not strike so well as No. 9.

Field No. 9 yielded a fair crop, but No. 6 entirely failed, owing firstly to its distance from the channel, and secondly to the salt which seemed to impregnate the soil.

The total out-turn was 2,752 lbs.

Linseed.

34. The following are the fields planted with linseed, viz:—

			A.	R.	P.
No. 5	...	...	2	0	0
„ 14	...	...	4	0	0
„ 15	...	...	1	0	0
„ 16	...	...	6	0	0
„ 28	...	...	2	1	0
„ 42	...	...	5	0	0
			20	1	0

The system of cultivation was ordinary; none of the fields had ever been manured. Sowings were carried under very unfavourable circumstances in the early part of October; germination was fairly successful, but the cessation of rain from 24th September to 3rd November made the ground so dry and hot that the young plants perished, and great gaps appeared in the crops. Two fields, Nos. 2 and 10, sown with linseed, completely died down, and were resown with wheat.

Under such circumstances it is not surprising that the out-turn is below the average.

The total out-turn was only 7 khundies, 16 kooroos, 6 pailis.

Gram.

35. The following fields were under gram:—

		A.	R.	P.
No. 11	...	4	0	0
„ 3	...	0	2	0
„ 4	...	0	2	0
„ 17	...	2	0	0
„ 33	...	0	2	0
„ 19	...	6	0	0
„ 35	...	2	2	0
		16	0	0

The cultivation was ordinary; none of the fields had been manured. Sowings were completed in October and November and germination was successful.

This crop withstood the drought in October, and was well brought on by the early rain in November.

The out-turn was 5,210 lbs.

Wheat.

36. The area under wheat was as follows :—

			A.	R.	P.
Field	No.	1 ...	4	0	0
,,	,,	2 ...	8	0	0
,,	,,	6 ...	2	3	0
,,	,,	12 ...	2	0	0
,,	,,	13 ...	5	0	0
,,	,,	16 ...	0	1	0
,,	,,	32 ...	5	0	0
,,	,,	33 ...	4	0	0
,,	,,	34 ...	10	0	0
,,	,,	36 ...	8	0	0
,,	,,	40 ...	5	0	0
			54	0	0

Field No. 1 was manured in 1879, and in the monsoon a luxuriant crop of country vegetables was taken off it and sold for Rs. 28-3-0. In October the field was "bakhared," and in November sown with wheat.

Field No. 2 had been manured in 1879, and various crops have been taken off it since; in September it was prepared for linseed and sown in October, but when the linseed died from drought, wheat was substituted.

Field No. 6 was manured in 1879, and wet and dry crops have been taken off it ever since.

Field No. 33 was manured in 1879; it was sown with cotton, but the cotton having been swept by the flood in July, 4 acres of it were reploughed and sown with wheat.

Field No. 34 received our best attention. In previous years this field was mostly fallow and no profitable crops was raised off it. This year it was manured with poudrette at 10 tons per acre and deeply ploughed.

The soil was also continually "bakhared."

Field No. 36 had been manured some years previous, but was overrun with "Kooch" grass: it was several times deeply ploughed and every effort made to eradicate the grass.

The other fields were unmanured.

The out-turn in fields Nos. 2, 6, 34 and 36 was remarkable.

The highest out-turn registered by careful selection of a ⅛ acre plot, came to 1,840 lbs. per acre, and the lowest to 528 lbs. per acre.

	lbs.
1874-75 ...	215
1875-76 .	459
1876-77 .	533
1877-78 .	161
1878-79 ...	268
1879-80 .	316
1880-81 .	356
1881-82 .	197

The average out-turn of field No. 6 is 1,288 lbs., of No. 34 is 1,073 lbs., and of No. 36 is 1,068 lbs., and the general average of all the fields is 635 lbs.; and it will be seen that this is superior to any crop reaped for the last 8 years, as shown in the margin.

There was one 1 acre plot, in field No. 34 which after yielding 270 maunds of green juari fodder till the month of October, was then prepared for wheat and sown in November, and yielded 1,370 lbs. of wheat!

This plot was specially prepared to ascertain the effect of the poudrette and also what effect would be made on the subsequent crop of wheat by taking a heavy green crop off the land. It was supposed that the wheat off that plot would be only half of what it would be off the rest of the field, but in point of fact the taking of this 270 maunds of green fodder off the land had no appreciable effect in the way of lessening the fertility of the soil. The crop of wheat off that acre was *above the average* of the rest of the field.

The real cause of the remarkable wheat crop was the 4·28 inches of rain that fell in November, it fell exactly at the proper time for the wheat to get every atom of advantage from it.

Sugar-cane.

37. The area under this crop was 2½ acres. The method of cultivation was ordinary. Poudrette was applied at the rate of 10 tons to the acre. The cane was planted rather late in the month of April, and as sufficient cane had not been reserved for seed, about ½ an acre was planted with cane purchased from the neighbouring villages, which was not good. Many of the canes turned out blind and gaps occurred, and the season being rather advanced the growth was retarded, Still the out-turn was fairly good. The canes were sold green, a large number being reserved for seed gratis for the Kachi cultivators from Cawnpore.

38. Two acres were planted with English and Country vegetables in field No. 11 near the main water channel. The vegetables raised from this field were very superior, and there was a good demand for them from the residents of the station. The seeds were good, they were got in in good time, and the early perfection of the vegetables was one of the main inducements to purchasers. The cabbages weighed from 5 to 8 lbs. Prizes were gained for vegetables at the Horticultural show.

Vegetables.

The total weight of the vegetables was 7,770 lbs., and the realised value Rs. 74-7-0.

39. To sum up the results of the working of the Commercial farm, I may note the cost of cultivation and the value of the out-turn as shown by Statement I.

Crop.	Cost of cultivation.			Value of crop.		
	Rs.	a.	p.	Rs.	a.	p.
Cotton ...	512	14	5	220	0	0
Juari ...	402	5	0	275	1	3
Thur ...	166	4	11	103	12	0
Tili ...	52	0	5	23	6	9
Linseed ...	129	14	0	117	9	5
Gram ...	190	15	2	116	0	0
Wheat ...	630	1	11	1,310	7	5
Rice ...	126	0	0	95	8	0
Sugar-cane ...	120	0	0	498	0	0
Vegetables ...	33	0	0	78	1	6
Total ...	2,364	1	10	2,837	14	4

So that, on the whole there is a profit of nearly 500 rupees, and this profit would have been much greater, but for the following reasons :—

Cotton.—Field No. 5 entrusted to the Cawnpore Kachi produced nothing.
Field No. 33, crop rooted up to make room for the Kachis, to plant sugar-cane.

Rice.—Field No. 6 dried up.

Linseed.—Fields Nos. 2 and 10 dried up.

Sugar-cane.—6,000 canes made over gratis to the Cawnpore Kachis for seed.

The sum actually realized from the Commercial farm was Rs. 1,444-8-5; but the whole of the rice and gram and greater part of the wheat is still unsold.

40. I will now proceed to comment on the Experimental farm.

41. About 6½ acres of land were planted with Broach cotton in fields Nos. 2 and 15, in order to ascertain its suitability for the black cotton soil of this district. The ordinary method of cultivation was tried; sowings were made towards the end of June. This cotton seemed to suffer more from the drought than our indigenous varieties. All indigenous varieties begin to flower in September, while this one was still flowering in February, and the following month being very hot and the ground cracked, exposing the roots to the sun and air, the pods began to drop off half ripe, and it became necessary to water the field artificially. This had a marked effect.

Broach cotton.

The out-turn of this crop was inferior to that registered in 1880-81 on irrigated land.

I am of opinion that this cotton is not suited to this soil and climate, unless there is abundance of water for irrigation.

42. This cotton was introduced last year from the Sydapet Farm. 2 acres in field No. 37 were planted, the field having been manured in 1879 and crops of various kinds since taken off it.

New Orleans cotton.

The system of cultivating was as usual, sowings with the drill was carried out in the end of June; germination was successful. The drought in August and October was very much against this cotton, and 25 per cent of the young plants entirely withered up.

A slight top dressing of poudrette was then applied to the roots of the plants which were ridged up, and the whole field was then irrigated; after this the plants made a start and grew well, some of the plants attaining a height of 5 or 6 feet. The flowering season corresponded with that of the indigenous variety; but continued well into January and February. This was probably owing to the growth of the plants having been checked or retarded for some time. The nature and habit of the plant demands, I should say, a rich boggy soil for its establishment. The out-turn was small, but the cotton was superior in quality.

The experiment should be tried again in a favourable season and on suitable soil,

43. One acre was planted with Hoshangabad "Julalia," and 3 acres with "Pissi" in field No. 10, to see if they would retain their quality. This wheat had been procured for despatch to Madras, on the requisition of a Native gentleman there, but as it arrived too late, it was put into the ground where the lucerne crop had died off for the reasons stated in para. 47.

Wheat.

The preparation of the ground and the sowing were similar to those used for indigenous wheat. The field had been manured in 1878, and several kinds of both wet and dry crops had since been taken off it. Sowing was done in November under favourable auspices, and the seed germinated well. The plants have grown well and yielded a fair out-turn: the "Julalia" exceeds the "Pissi" by 565 lbs. The quality of the wheat was inferior and not equal to the quality of the seed sown, it was slightly discoloured and would here be termed "Bokra."

44. One acre of field No. 34, on which a luxuriant crop of juari green fodder had been harvested during the kharif season, was planted with this wheat. The object in view being to ascertain whether taking a crop of green fodder off a newly manured field during the rains would injure the rabi crop to be sown on it *after* the rains.

Howra wheat.

The whole of field No. 34 was manured at 10 tons to the acre and then ploughed and several times "bakhared." The Cawnpore Kachis chose this field for their cultivation, and a good half of the field was made over to them, and the remainder (including this one acre) was sown with wheat. The result was very remarkable,—the out-turn on this acre, so far from being less than the rest of the field, was actually more, the yield being 1,370 lbs. as compared with an average of 1,073 lbs. in the rest of the field.

This experiment would tend to show that it does not injure the fertilizing power of fresh poudrette to take a green crop off it before sowing wheat. I believe the real fact to be that whereas the juari sown on this one acre held the manure together and retained it *in situ*, the rest of the field was a good deal scoured by the rush of water during the monsoon, and a good deal of the manure was washed clean away.

45. As stated above in para. 23, field No. 5 was taken up for an experiment in trenching on the Cawnpore system, and an experienced agriculturist was got down from Cawnpore to look after it.

Trenching.

For some time trenching went on, but it was found that the ground began to split and crack into great fissures, and that every shower of rain abraded the ground and exposed the "muck." You may also remember that after a careful calculation of the number of seasons it would take (with our limited supply of "muck") to trench even one ordinary sized field, you came to the conclusion that it would not pay, and the trenching was abandoned.

46. There remains only the Fodder farm to remark on.

47. *Lucerne grass* was planted on 2 acres in field No. 11, but just when it was ready to cut, the Kachis wanted all the water, so it was dried up, and nothing was realized against an expenditure of Rs. 40 8-0.

Guinea grass was not attempted for the same reason, and the old stools were allowed to die.

Onions were planted in 2 acres in field No. 11, and in 2 acres in field No. 9, where the Chimur rice had been reaped. They were raised in a seed-bed and then planted out, and were approaching maturity on 1st April, but I understand were afterwards dried off and pulled up in an immature state and rotted. Expenditure Rs. 43, income *nil*.

Brinjals suffered the same fate, the Kachis, with their cane cultivation, taking the *whole* supply of water.

The Fodder farm, which generally pays well, was therefore an utter failure.

48. Fields Nos. 44, 45, 46, 46*a*, 47, 48, 21, 30, 23, 25, and 29, comprising an area of 91 acres, were leased out during the last year at a rental of Rs. 130, and as the rabi season was favourable, the cultivators generally had fair crops from the farm lands; one of them had an excellent crop of wheat in field No. 24, though not equal to the out-turn on the farm.

General Remarks.

49. Notwithstanding the peculiarity of the season and the drought in August and again in October, the results are very favourable if the fields sacrificed to the Kachis had yielded the average crops of cotton &c. and there would have been a further profit of Rs. 200 on the Commercial farm, which would have brought the profit up to about 20 per cent on the expenditure.

Compared with the out-turn factors of the Nagpur district the results are excellent.

The road from Anjni road to the farm is an experiment in road-making which may prove of value for the construction of District roads. The ruts only are metalled, the berms and centre are kutcha, and the road only cost Rs. 99-7-10, and has stood the heavy traffic of the "muck" carts fairly well.

50. The 'farm steading' was kept in repair, but no new buildings were undertaken.

51. *Livestock.*—There were 16 pairs of bullocks in hand on the 1st April, of which 3 pairs were working in carting sewage and one was made over to the Kachi cultivators; 12 pairs did all the farm work and were in good condition on the 1st April 1883.

52. *Water Channel.*—During the year a portion of the branch channel leading to the Kachi cultivation was laid out with broad tiles; since April the whole of the water has been taken by the Kachis.

53 *Machinery and Implements.*—One improved plough and one sugarcane mill were sent to the Deputy Commissioner of Bhandara.

1 Plough, 1 Bakkur, 1 Seed drill for kharif, and 1 Seed drill for rabi were made and sent to the Deputy Commissioner, Sambalpur.

1 Bihea sugar-cane mill was sent to the Deputy-Commissioner, Chanda.

1 Chaff cutter, 1 Bullock and Gear, 1 Portable Forge were repaired and put into working order in the Railway Workshops.

FINANCIAL.

54. There was no alteration in the form of accounts during the year. The daily accounts, was examined and checked by me daily, and the statistics for the year are complete.

Statement No. II. shows the cash account for the past year.

The revenue remitted into the Treasury is Rs. 2,030-11-9, and the unsold stock of grain in hand comes to Rs. 1,750, aggregating Rs. 3,780-11-9, and deducting Rs. 400 on account of last year's stock sold, the net cash obtainable from this year's operations amounts to Rs. 3,380-11-9.

All charges are clearly detailed on the debit side of Statement II. under 7 heads.

1. Denotes the charges on the year's crop, such as servants' wages, cooly hire, feed of cattle, &c. &c.

2. Capital expenditure, such as carriage of sewage, construction and repair of buildings water channels, roads, &c., is not chargeable to crops.

3. Purchase and repair of implements.

4. Salary of Superintendents &c. This is much lower, as Mr Mylne, who drew Rs. 250 a month, was discharged on the 12th July, and I received no extra remuneration. The assistant Mr. Jacob received only 75 Rs. a month, and there was therefore a saving of Rs. 175 a month for 8½ months.

5. Cash remittance for Revenue.

6. General expenditure consists of fixed establishment, not included in field labour.

7. Expenditure incurred in introducing Kachi colonists.

55. I need say no more. The arrangements for leasing the old Model farm and starting the new experimental farm are in your own hands. I have done my best, and only regret that the results are so meagre. During the rains the farm caused me great anxiety, and I was there at least 3 times a week inspecting the various crops and arranging for the wants of the Kachis, who were new to the place, inclined to be discontented, and for whose final and permanent location the Chief Commissioner especially enjoined me to be careful. I was therefore afraid to disgust them, and yet did not wish them to be idle, but to act *suaviter in modo fortiter in re*, was a real difficulty. Their final and happy establishment is due more to your management than to mine.

I have the honor to be,
Sir,
Your most obedient Servant,

H. I. LUGARD,
Deputy Commissioner.

STATEMENTS.

STATEMENT No. I.

Field No.	Name of crops.	Area in acres.	Description and weight of manure.	Rate per acre seed sown in pounds.	Total yield of grain.	Total yield of chaff.	Yield of grain. Rate per acre.	Yield of chaff. Rate per acre.	Total cost of cultivation.	Rate per acre of cultivation.	Gross value of out-turn.	Realised value of out-turn.	Remarks.
		A. R. P.							Rs. a. p.	Rs. a. p.	Rs.. a. p.	Rs. a. p.	
1	Cotton Bani and Juari.	4 0 0	...	12	1,034	...	*258	...	214 6 11	53 8 0			* or 64 lbs. clean cotton.
7	Do. ..	7 3 8	...	...	1,056 / 660 J	240 / 75K.	132 / 82½	30 Ch. / 10 K.	102 5 11	13 0 0			33 lbs. clean cotton.
8	Do ...	5 0 0	...	...	310 / 550 J	216 / 75K.	62 / 110	43 Ch. / 15 K.	48 7 0	9 8 0	220 8 0	190 8 0	15 ditto.
12	Do. ...	1 0 0	...	...	248 / 422 J	96 / 75	248 / 422	96 Ch. / 75 K.	8 0 0	8 0 0			62 ditto.
33	Do. ...	5 0 0	10	...	440 / 2,271 J	432 / 150	88 / 466	86 Ch. / 30 K	139 10 7	28 0 0			
		22 3 8	...	...	3,088 / 3,903	984 / 375	134 / 170	43 / 16	512 14 5	22 0 0	220 8 0	190 8 0	
3	Juari and Mung ...	5 0 0	...	9	1,060	432 / 300K	212	86 / 60	101 5 10	20 0 0			
4	Do. ...	8 0 0	...	...	1,351	384 / 250K.	169	48 / 31	80 11 1	10 0 0			
39	Do. ...	8 0 0	...	...	1,020	480 / 975K.	127	60 / 122	74 1 1	9 0 0	275 1 3	191 5 3	
41	Do. ...	8 0 0	...	...	786 / 350	336 / 1,375K	142	42 / 172	45 5 3	6 0 0			

37	Do.	...	7	0	0	...	...	3,370	960 / 925K		481	137 / 132		60	13	9	9	0	0					
			36	0	0	...	...	7,937	2,592 / 3,825		220	72 / 106		362	5	0	11	0	0	275	1	3	191	5	3
11	Thur and Juari	...	5	0	0	...	12	620 T. / 630 J.	648 / 30 K.		124 T. / 126 J.	130 / 6 K.		40	15	9	8	0	0					
12	Thur	...	9	0	0	...	12	1,000 T. / 422	528 / 75 K		111 T. / 47 J	59 / 8		43	11	11	5	0	0					
15	Do.	..	5	0	0	...	...	1,020 T. / 708 J	648 / 40 K.		204 T. / 142 J.	130 / 8 K		25	5	9	5	0	0	103	12	0	93	8	0
31	Do.	...	6	0	0	...	...	580	288		97T.	48		13	1	0	2	0	0					
22	Do.	..	6	0	0	...	...	1,020	600		170	100		27	6	0	4	8	0					
43	Do.	..	3	0	0	...	...	500	240		167	80		16	6	6	5	0	0					
			34	0	0	...	...	4,740 / 1,760	2,952 / 145		110 / 52	84 / 4		166	14	11	5	0	0	103	12	0	93	8	0
16	Til	...	5	0	0	...	2	200	...		40	...		28	15	8	6	0	0	23	6	9	23	6	9
17	Do.	...	2	0	0	...	...	420	...		210	..		23	0	9	11	0	0					
			7	0	0	...	...	620	...		88	...		52	0	5	7	0	0	23	6	9	23	6	9
5	Linseed	...	2	0	0	...	9	470	400		235	200		29	3	9	14	0	0					
14	Do.	...	4	0	0	...	...	548	720		137	180		28	1	7	7	0	0					
15	Do.	...	2	0	0	...	...	570	470		285	235		24	5	2	12	0	0					
16	Do.	...	6	0	0	...	...	540	648		90	108		11	7	2	2	0	0	117	9	5	109	9	5
28	Do.	...	2	1	0	...	9	186	216		93	109		14	6	5	7	0	0					
42	Do.	...	5	0	0	...	...	512	775		105	155		22	5	11	4	8	0					
			21	1	0	...	...	2,826	3,231		141	161		129	14	0	6	8	0	117	9	5	109	9	5

Statement No. I.—Contd.

Field No.	Name of crops.	Area in acres.	Description and weight of manure.	Rate per acre seed sown in pounds.	Total yield of grain.	Total yield of chaff.	Yield of grain. Rate per acre.	Yield of chaff. Rate per acre.	Total cost of cultivation.	Rate per acre of cultivation.	Gross value of out-turn.	Realised value of out-turn.	Remarks.
		A. R. P.							Rs. a. p.	Rs. a. p.	Rs. a. p	Rs. a. p.	
41	Gram ...	4 0 0	...	30	920	418	230	105	45 1 1	11 0 0			
6	Do. ...	4 0 0	...	30	1,380	550	345	138	31 2 6	8 0 0			
4	Do. ...	0 2 0	...	...	200	88	400	176	5 5 2	10 10 4			
17	Do. ...	2 0 0	...	...	180	66	90	33	27 10 7	14 0 0	116 0 0	.....	
33	Do. ...	0 2 0	...	...	230	110	460	220	3 15 2	8 0 0			
19	Do. ...	6 0 0	...	...	1,540	660	257	110	48 13 1	8 0 0			
35	Do. ...	2 2 0	...	...	760	330	508	222	28 15 7	12 0 0			
		19 2 0	...	...	5,210	2,222	267	114	190 15 2	10 0 0	116 0 0	.....	
1	Wheat ..	4 0 0	...	50	460	1,512	115	378	21 6 3	5 0 0			
2	Do. ...	8 0 0	...	...	8,960	6,672	1,120	834	76 8 11	9 8 0			
6	Do. ...	2 3 0	...	...	3,542	7,080	1,288	4,046	37 9 3	13 0 0			
12	Do. ...	2 0 0	...	...	1,013	1,392	506	696	16 8 8	8 4 0			
13	Do. ...	5 0 0	...	...	1,036	1,500	207	300	37 5 3	7 0 0			
16	Do. ...	0 1 0	...	...	220	290	880	1,160	2 10 10	10 8 0			
32	Do. ...	5 0 0	...	...	845	672	169	134	40 1 2	8 0 0	1,310 9 5	330 0 0	
33	Do. ...	4 0 0	...	...	840	1,500	210	375	21 14 1	5 8 0			
34	Do. ...	10 0 0		10	10,732	12,456	1,073	1,246	160 5 5	16 0 0			
36	Do. ...	8 0 0	...	...	8,540	9,500	1,068	1,188	162 3 10	20 0 0			
40	Do. ...	5 0 0	...	..	1,740	2,544	348	509	53 8 3	10 0 0			
	General droppings ...	...	...	...	2,000	...	...	...	.....	.....			
		54 0 0	...	...	39,928	45,118	739	835	630 1 11	12 0 0	1,310 9 5	330 0 0	

6	Rice	...	2	0	0	2	40	*Nil.*	*Nil.*	...	...	86	6	4	43	0	0	95	8	0	.....	
9	Do.	...	3	0	0	10	...	2,320 lbs.	560	773	187	138	3	10	46	0	0					
8	Do.	...	1	0	0	10	...	432	200	432	200	37	2	11	37	0	0					
								Canes.														
11	Sugar-cane	...	2	2	0	10 p.	12,262	39,146	...	15,658	...	297	10	2	120	0	0	498	0	0	423	1	6
11	Vegetables	...	2	0	0	10	...	7,770	...	3,885	...	67	1	1	33	0	0	78	1	6	78	1	6
	Fodder Farm.																					
11	Lucerne grass	...	2	0	0	10 p	20	.. ...	800	...	400	81	6	7	40	8	0	4	0	0	... .		
34	Juari	..	1	0	0	10 p.	26	21,600	...	21,600	...	68	0	0	68	0	0	135	0	0	135	0	0
	Experimental Farm.																					
2	Broach cotton	...	5	2	0	...	12	67	...	12	...	90	2	10	16	0	0	25	2	0	25	2	0
15	Do.	..	1	0	0	...	12	80	...	80	...	5	0	0	5	0	0	13	12	9	13	12	9
37	New Orleans cotton	...	2	0	0	10	12	246	...	123	...	59	0	0	29	0	0	.....			. ..		
10	Wheat, Jelalia	..	1	0	0	...	50	1,605	2,739	1,605	2,739	74	5	2	18	8	0	55	0	0	.....		
10	Do. Pissi	...	3	0	0	...	50	3,122	8,217	1,040	2,739				.....			113	0	0	... ..		
34	Do. Howra	...	1	0	0	10	50	1,370	4,320	1,370	4,320	40	0	0	40	0	0	51	8	7	.. ...		
	(*Juari fodder plot.*)																					
11	Onions	..	2	0	0	10	...	2,340	...	1,170	...	29	11	6	15	0	0	20	0	0	.....		
9	Onions	...	2	0	0	10	...	2,382	...	1,191	...	59	9	6	30	0	0	23	0	0	.....		
8	Brinjals	...	1	2	0	10	...	.....	...	..	...	63	11	9	21	0	0	.. ..			.....		
			226	0	8	...	...	.....	...	...	...	3,242	9	6	... ..			3,279	3	8	1,613	7	2

NAGPUR :
9th June 1883.

H. I. LUGARD,
Deputy Commissioner.

STATEMENT No. II.

Statement of Accounts of the Nagpur Model Farm, from 1st June 1882 to 31st March 1883.

				Rs.	a.	p.	Rs.	a.	p.
To received from the Treasury—									
To Cash from the grant of 1882-83			..	5,230	15	2			
„ Inter-departmental transfers from	do.		...	1,014	6	4	6,245	5	6
„ Cash for salaries			...	...	..	...	1,346	12	5
To revenue.—									
		Rs.	a.	p.					
By Cash		2,030	11	9					
To Inter-departmental transfers—				...					
Home grown fodder consumed...		189	0	0					
Seed grain		186	9	7			2,406	5	4
							9,998	7	3
							*19	6	6
Grand Total ...							10,017	13	9

					Rs.	a.	p.	Rs.	a.	p.
No. 1. By expenditure on crops—										
				Rs.	a.	p.				
Commercial	...	2,531	3	8						
Experimental	...	751	5	10						
Cultivated but fallow	...	392	9	0	3,675	2	6	3,675	2	6
No. 2. By capital expenditure—										
Carriage of sewage to Farm	...	142	12	5						
Construction and repairs to Buildings and water channels	...	44	8	8						
Do. to roads	...	99	7	10						
Miscellaneous	...	299	10	3	586	7	2	586	7	2
No. 3. Purchase of stock—										
Implements.	...			...	268	3	11	268	3	11
No. 4. By salaries—										
Superintendent	...	596	12	5						
Assistant Superintendent	...	750	0	0	1,346	12	5	1,346	12	5
No. 5.										
By Cash remittances	...			...	2,030	11	9	2,030	11	9
No. 6.										
General expenditure	...			...	917	7	7	917	7	7
No. 7. Expenditure on Kachi introduction—										
Subsistence allowance	...	506	1	11						
Railway freight from Cawnpur	...	355	1	3						
Seeds supplied	...	189	7	6						
Advance recoverable	...	42	5	9						
Constructing hamlets	...	100	0	0	1,193	0	5	1193	0	5
Grand Total	..							10,017	13	9

* Allotment has been exceeded by Rs. 287-6-1, and the deficiency here is Rs. 19-6 6. About Rs. 268 worth of grass which is in store is not included in this account, which accounts for the difference.

NAGPUR
9th June 1883.

H. I. LUGARD,
Deputy Commissioner.

STATEMENT No. III.

Unsold stock in hand on 1st April and its probable value.

		Rs.	a.	p.
71,391 lbs.	Chaff, at 400 lbs. per rupee	178	8	0
3,970 bundles	Karbi, at Rs. 20 per 1,000 bundles	79	6	5
	Dirty cotton, including seed reserved	30	0	0
K. C. P.				
2 10 0	Juari seed, at Rs. 6 per khandy	15	0	0
89 5 0	Wheat, at Rs. 12 per khandy	1,071	0	0
	Rice	95	8	0
	Sugar-cane seed made over to Kachis	74	14	6
4,722 lbs.	Onions	43	0	0
	Ambari	25	0	0
	Thur stalks	25	0	0
K. C. P.				
13 0 0	Gram, at Rs. 9 per khandy	117	0	0
	Grand Total ...	1,754	4	11

NAGPUR.
28th June 1883.

H. I. LUGARD,
Deputy Commissioner.